INFLUENCE OF CLIMATE ON FAUNAL EVOLUTION
IN THE QUATERNARY

PREFACE

In January, 1991 the European Science Foundation (ESF) created a Network on Quaternary Mammalian Faunas. Among the goals of this network was to organize a series of workshops dealing with important aspects of the evolution of mammalian faunas during the Quaternary. Each of these workshops was attended by 20-30 invited participants, each of whom presented a paper on a specific topic related to the Quaternary. The last workshop was held in Antwerp, Belgium, in October 1993, jointly organized by J. Agustí and L. Werdelin. The present volume contains the proceedings of that third meeting.

The Quaternary is a period characterized by diverse shifts in the climate. More than in any other period in the Cenozoic, these fluctuations in temperature influenced the composition of mammalian faunas, controlling the areas of colonization and extinction of species, as well as the overall composition of the fauna. The present volume contains the papers presented at the workshop, which was attended by over 50 scientists from Europe and the Middle East. The workshop was organized and edited by J. Agustí and L. Werdelin.

The papers presented in this volume cover a wide range of topics, from the paleobiology of individual species to the broader patterns of faunal evolution during the Quaternary. The editors have taken the opportunity to bring together a selection of papers from the workshop, providing a comprehensive overview of the state of knowledge in this field. The volume concludes with a final discussion that brings together the various threads of research presented in the papers.

The contributors to this volume include scientists from Europe, the Middle East, and North America. Their expertise covers a wide range of topics, from the paleoecology of individual species to the broader patterns of faunal evolution during the Quaternary. The editors have taken the opportunity to bring together a selection of papers from the workshop, providing a comprehensive overview of the state of knowledge in this field.
PREFACE

In January, 1991 the European Science Foundation (ESF) created a Network on Quaternary Mammalian Faunas. Among the goals of this network was to organize a series of workshops dealing with important aspects of the evolution of mammalian faunas during the Quaternary. Each of these workshops has included 20-25 invited participants, each of whom was asked to contribute to a given topic. The first workshop was held in Andernach, Germany in October, 1991 (local organizer W. V. KOENIGSWALD) and dealt with the topic **Mammalian migration and dispersal events in the European Quaternary**. It has since been published under this title as Courier Forschungsinstitut Senckenberg 153: 1-228 (W. V. KOENIGSWALD & L. WERDELIN, eds). The second workshop, on **Modes and tempos of evolution in the Quaternary** was held in Dijon, France in September 1992 (local organizer J. CHALINE). This has been published in Quaternary International 19: 1-116 (J. CHALINE & L. WERDELIN, eds.). The third workshop took place in Sant Feliu de Guixols, Spain in April 1993 (local organizer J. AGUSTI) and was on the topic **Influence of climate on faunal evolution during the Quaternary**. The present volume records the proceedings of this third meeting.

The Quaternary is a period characterized by dramatic shifts in the climate. More than in any other period of the Cenozoic, these fluctuations in temperature influenced the composition of mammalian faunas, controlling the series of extinction events that punctuate the period. Therefore it is not surprising that one of the first aims of the ESF Network on Quaternary Mammalian Faunas was to pay particular attention to this topic. The Sant Feliu de Guixols workshop was attended by 22 scientists from 15 countries: J. AGUSTÍ (Sabadell, Spain), P. ANDREWS (London, United Kingdom), A. FORSTEN (Helsinki, Finland), C. S. GAMBLE (Southampton, United Kingdom), R. D. GUTHRIE (Fairbanks, U. S. A.), R. JULIÁ (Barcelona, Spain), W. V. KOENIGSWALD (Bonn, Germany), M. KÖHLER (Sabadell, Spain), T. VAN KOLFSCHOTEN (Leiden, The Netherlands), E. KOLSTRUP (Sonderborg, Denmark), L. KORDOS (Budapest, Hungary), K. KOWALSKI (Kraków, Poland), T. LITT (Leipzig, Germany), W. D. MANIA (Halle/Saale, Germany), L. I. REKOVETS (Kiev, Ukraine), B. RZEBIK-KOWALSKA (Kraków, Poland), J.-P. SUC (Montpellier, France), E. TERZEA (București, Romania), A. TESAKOV (Moscow, Russia), D. TORRE (Florens, Italy), A. TURNER (Liverpool, United Kingdom), L. WERDELIN (Stockholm, Sweden).

A first set of papers was devoted to correlation between climatic evolution and bioevent succession in different geographic areas during the Quaternary. Some were centered at the regional scale, e. g., J.-P. SUC (Mediterranean) and A. TURNER (Africa-Eurasia), while others focused on more restricted areas, e. g., E. TERZEA (Romania), A. TESAKOV and L.
I. REKOVETS (Ukraine). The main aim of these papers was to discuss the degree of congruence between the climatic evolution inferred from palynological or isotopic criteria and the main events observed in the mammalian fossil record.

A second major topic of the workshop was the use of fossil mammals as paleoclimatic indicators. General contributions to this field were presented by P. ANDREWS and T. VAN KOLFSCHOTEN, who discussed the analysis of diversity and the quantitative composition of faunas. A critical analysis of the use of rodents and insectivores was presented by K. KOWALSKI and B. RZEPIEK-KOWALSKA, respectively. The main aim of this topic was to analyze the criteria by which mammals are used as ecological or climatic indicators by paleomammalogists.

A third group of contributions focused on the influence of climate on the distribution and eventually extinction of the cold faunas of the last glacial-interglacial cycle (D. GUTHRIE, D. MANIA, E. KOLSTRUP, C. GAMBLE). Special attention was paid to the combined influence of man and climate on the composition of the mammalian faunas of this period.

As members of the network committee and editors of this volume we would like to thank the ESF and especially Jan-Henrik KOCK and Pat COSGROVE for support and help which contributed decisively to the success of the workshop. We thank also Prof. K. KOWALSKI and the staff of Acta zoologica cracoviensia for offering to publish this meeting proceedings.

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